

CLAIMS

- [00393] What is claimed is:
- [00394] 1. A method of identifying a toxicologically relevant canine gene comprising the steps of:
- [00395] (a) obtaining a gene expression profile of untreated canine cells;
- [00396] (b) obtaining a gene expression profile of canine cells treated with an agent; and
- [00397] (c) comparing the gene expression profile of untreated canine cell with the gene expression profile of the treated canine cells to obtain a gene expression profile indicative of a toxicological response.
- [00398] 2. The method according to claim 1 wherein the canine cells are kidney cells.
- [00399] 3. The method according to claim 2 wherein the kidney cells are MDCK cells.
- [00400] 4. The method according to claim 1 wherein the canine cells are isolated from a biological sample.
- [00401] 5. The method according to claim 1 wherein the gene expression profile is obtained by:
- [00402] (a) providing canine cells;
- [00403] (b) dividing said cells into two groups;
- [00404] (c) using the first group of canine cells as a control group;
- [00405] (d) exposing the second group of canine cells to an agent;
- [00406] (e) isolating RNA from the first and second groups of canine cells;
- [00407] (f) generating double stranded cDNA from said RNA;
- [00408] (g) labeling said cDNA;
- [00409] (h) resolving said cDNA on a gel; and

- [00410] (i) comparing intensity of bands between the group of cells or tissue exposed to said agent and the group of cells or tissue not exposed to said agent.
- [00411] 6. The method according to claim 5 wherein the gene expression profile is stored in a database.
- [00412] 7. The method according to claim 1 wherein the gene expression profile is obtained by transcriptome profiling.
- [00413] 8. The method according to claim 1 wherein said agent is an agent listed in Table 10.
- [00414] 9. A method of isolating canine genes indicative of a toxicological response to an agent comprising the steps of:
- [00415] (a) providing sequences of mammalian non-canine genes associated with toxicological responses;
- [00416] (b) providing primers homologous to said genes; and
- [00417] (c) using said primers to amplify canine genes from a canine cDNA library.
- [00418] 10. The method according to claim 9 wherein the mammalian non-canine gene is a human gene.
- [00419] 11. The method according to claim 9 wherein the mammalian non-canine gene is a rat gene.
- [00420] 12. A method for determining a toxicological response to an agent comprising the steps of:
- [00421] (a) exposing cells to an agent;
- [00422] (b) obtaining a first gene expression profile from said cells;

- [00433] 18. The method according to claim 17 wherein at least one gene expression profile of a toxicologically relevant canine gene is stored in a database.
- [00434] 19. The method according to claim 17 wherein said agent is a drug.
- [00435] 20. The method according to claim 17 wherein said agent is a pharmaceutical composition.
- [00436] 21. A method for generating a canine array comprising isolating at least ten canine genes which are indicative of a toxicological response and attaching said genes to a substrate.
- [00437] 22. The method according to claim 21 wherein said substrate is a solid substrate.
- [00438] 23. The method according to claim 22 wherein said solid substrate comprises glass.
- [00439] 24. An array comprising of at least ten canine toxicological response genes or a portion thereof immobilized on a substrate.
- [00440] 25. The array according to claim 24 wherein said substrate is a solid substrate.
- [00441] 26. The array according to claim 25 wherein said solid substrate comprises glass.
- [00442] 27. The array according to claim 24 wherein said genes are attached to said substrate by covalent linkage.

- [00443] 28. The array according to claim 24 wherein said genes or portions thereof are capable of hybridization to expressed nucleic acids derived from a cell and are capable of indicating a toxic response of the cell to said agent.
- [00444] 29. The array according to claim 24 wherein said genes have a gene expression indicative of toxicological response to an agent listed in Table 10.
- [00445] 30. The array according to claim 24 comprising at least 10 canine toxicological genes or a portion thereof.
- [00446] 31. The array according to claim 24 comprising at least 25 canine toxicological genes or a portion thereof.
- [00447] 32. The array according to claim 24 comprising at least 50 canine toxicological genes or a portion thereof.
- [00448] 33. The array according to claim 24 comprising at least 100 canine toxicological genes or a portion thereof.
- [00449] 34. The array according to claim 24 comprising at least 250 canine toxicological genes or a portion thereof.
- [00450] 35. The array according to claim 24 comprising at least 500 canine toxicological genes or a portion thereof.
- [00451] 36. The array according to claim 24 comprising at least 750 canine toxicological genes or a portion thereof.

09511904-072301
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- [00452] 37. The array according to claim 24 comprising at least 1000 canine toxicological genes or a portion thereof.
- [00453] 38. An array comprising at least 10 genes of Table 8.
- [00454] 39. An array comprising at least 10 genes of Table 9.
- [00455] 40. A method for obtaining a gene expression profile comprising exposing a population of cells to an agent, obtaining cDNA from said population of cells, labeling said cDNA, and contacting said cDNA with the array according to claim 20.

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